LEADING THE CHARGE®

Cellular/Wi-Fi Router and Enclosure Installation

for Electrical Contractors

Rev. 1.4--6.10.13

Cellular/Wi-Fi Router and Enclosure
Installation Instructions (WC12000 & WW12000)

IMPORTANT SAFETY INSTRUCTIONS

SAVE THESE INSTRUCTIONS

WARNING- When using electrical products, basic precautions should always be followed including the following:

- Read all the instructions before using this product.
- This device should be supervised when used around children.
- Do not use this product if there are any signs of damage.
- Do not operate the router in temperatures outside the operating range of 14°F to 122°F (-10°C to 50°C).
- The wiring and conduit must be installed by a certified electrician and must comply with local electrical codes and ordinances.
- Do not install the router near flammable, explosive or combustible materials.

WARNING- No user serviceable parts are inside. Repair should only be done by Customer Solutions Engineers.

RISK OF ELECTRIC SHOCK

IMPORTANT- These Installation Instructions must be strictly adhered to.

The specifications, instructions and other information in this manual are subject to revision at any time without prior notice. Please contact PEP Stations by calling (888) 760-0140 to request the most current version.

1.0 Introduction & Overview

1.1 Connectivity to the Internet

PEP Stations' PS2000 cellular and Wi-Fi connectivity option allows secure Internet access in locations where hard-wired Ethernet cable is not a viable option or where company policy will not allow connectivity on the corporate network.

The cellular or Wi-Fi solution, external to the PEP Station, is integrated with an "Electric Vehicle Parking" sign. The router is encased inside a NEMA enclosure, designed to be mounted onto post or wall displayed "Electric Vehicle Parking" signage.

Two PEP Stations (4 parking locations / charging points) can share one router. PEP Stations will provision and configure the router prior to shipment. If using the cellular connectivity option, the station owner is required to verify that cellular service from Verizon is available at the installation location. If using the Wi-Fi connectivity option, the station owner is required to verify that a Wi-Fi hotspot is within range of the installation location and that it provides adequate signal strength and quality.

Network Connectivity

Software for the PEP Station PS2000 is fully encrypted based on RSA private /public key exchange and AES (256 Bit) session encoding. This technology utilizes the same standards as https/SSL with traffic being sent over port 443.

Each PS2000 runs Windows Embedded Standard 7 with firewall services to ensure the integrity and stability of the system.

1.2 Technical Specifications

Power Specifications

DC Power Input	12V powered by PEP Station

Safety and Operational Specifications

Safety Compliance	FCC Part 15, IC, 802.3, plus carrier specific certifications

Network Specifications

Technology	3G EVDO for Verizon or Wi-Fi (optional)
Frequency Band	Cellular/PCS (800Mhz/1,900Mhz)
Status Indicators	LAN, port status, power, signal strength
Type	Router

Enclosure Specifications

Rating	NEMA 4X per NEMA 250-1997
Dimensions	9.0”x3.4”x10.8”
Total Weight	Approx. 5 lbs

IMPORTANT: A site survey should be performed prior to selecting an installation location to ensure that adequate Verizon cellular service or that a Wi-Fi hotspot is available. In some instances, the use of a Verizon cellular phone may be adequate to determine if the site provides suitable service.

2.0 Router and Enclosure Installation

2.1 Before you start

The following procedures must be completed before installing the cellular or Wi-Fi router:

- Secure a licensed electrician. PEP Stations can provide preferred installers if desired.
- If necessary, the licensed electrician will secure permits and any other required approvals from the local municipality.
- Verify that all of the listed components have been provided within the installation kit.

A site survey should be performed prior to selecting an installation location to ensure that adequate Verizon cellular service or that a Wi-Fi hotspot is available. In some instances, the use of a Verizon cellular phone may be adequate to determine if the site provides suitable service.

2.2 Component List

The following items are *supplied to the installer:*

- Broadband router
- Router power connector
- NEMA 4X Gray enclosure
- 18”x12” Plastic EV sign
- 3/16” x 14¼” x 9” Mounting flange
- ¾” Conduit compression connector
- (2) Torx tamper resistant screws (M4X.7X22mm)
- T-20 Tamper resistant Torx bit
- (4) Hex screws (M4X0.7X40mm)
- (4) Fender washers (M4X12mm OD)
- (2) ¼”-20 x 2½” SS button head screw
- (2) ¼”-20 Nylon insert hex flange locknuts
- (4) ¼”-20 x ¾” Zinc washers
- (4) #8 x ¾” Sheet metal screws
- (2) 3M #558 Wire connectors

The following items are *provided by the installer:*

- ¾” PVC conduit
- 10’x3¼”x1½” U-channel green baked enamel sign post
- General Cable #E1032S or equivalent: Two-wire, 18 gauge, stranded, with PVC jacket, and black & red conductors, unshielded (length as required)
- (2) 18 gauge wire nuts
- CAT5 Ethernet cable and RJ45 connector
- Plastic zip ties

***Important:** *Material and specifications may vary depending on site characteristics and local building codes.*

2.3 Cellular router and enclosure installation diagram

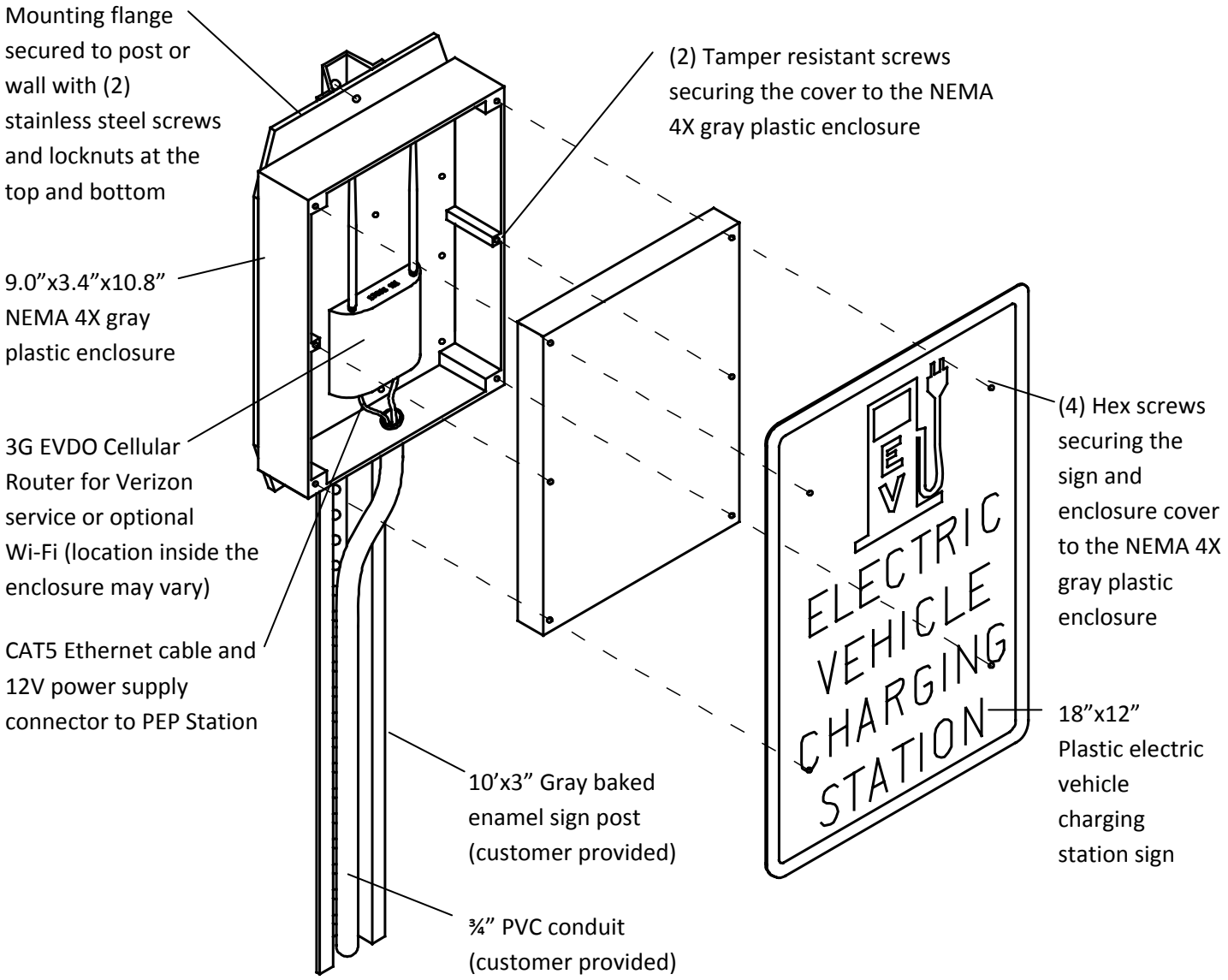

Figure 1

2.4 Router and enclosure installation process and checklist

The following set of instructions outlines the process for installing the sign post, conduit, enclosure and router. Some installations may deviate from this process due to site restraints and local codes.

Steps:

☐ 1. Run the ¾" PVC conduit underground from the PEP Station base to the sign location as shown in *Figure 2* at a depth compliant with local codes. The CAT5 Ethernet wire and 18 gauge power supply wires will run in the same ¾" conduit.

Important: ¾" PVC conduit must be used.

If one router is being used to provide Internet to two stations, a wye will need to be installed as shown in Figure 3.

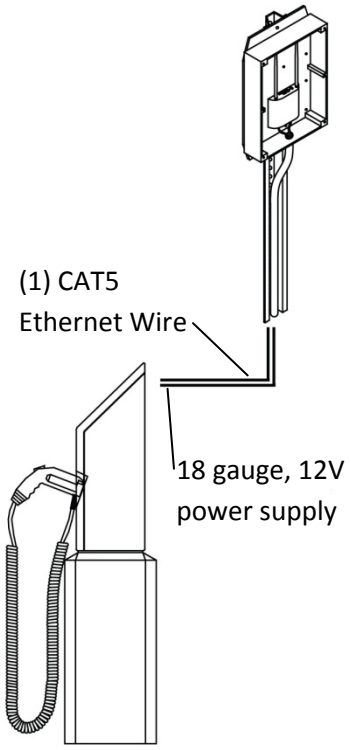

Figure 2

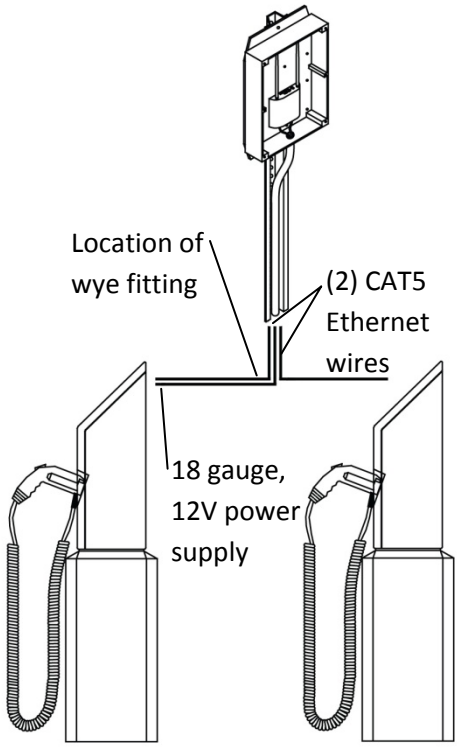

Figure 3

☐ 2. Install the U-channel sign post so that the bottom is at least 24" below grade and check that it is plumb.

Important: The U-channel must be positioned so that the concave surface is facing the parking spaces as shown in Figure 4.

☐ 3. Remove the router from the enclosure and secure the enclosure to the sign post using the (2) ¼"-20 x 2½" button head screws and (2) ¼"-20 hex flange locknuts. The top of the mounting flange should screw to the topmost hole on the U-channel sign post. See *Figure 5* on page 8.

☐ 4. Run the ¾" PVC conduit from the bottom of the U-channel sign post up to the bottom of the NEMA enclosure. The conduit should be installed along the side of the post facing the parking spaces and go through the void in the U-channel as shown in *Figure 4* to the right and *Figure 5* on page 8.

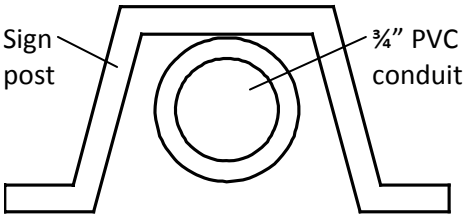

Figure 4

5. Bend the conduit to feed into the PVC adapter on the underside of the gray enclosure as shown in *Figure 5*. Cutting back the conduit and installing an elbow fitting to terminate at the adapter would be an acceptable alternative method.
6. Use a PVC adhesive to seal the conduit around the adapter and set in place.
7. Secure the PVC conduit to the sign post using zip ties spaced at 12" intervals.
8. Make sure that the power has been disconnected to the PEP Station by verifying that the two breakers at the panel are in the off position. Double check the circuits by using a voltmeter at the wires that run into the PEP station.
9. Pass the CAT5 Ethernet cable and 18 gauge wires from the PEP Station base up through the PVC conduit and into the NEMA enclosure. Leave at least 6" of extra cable in the router enclosure and at least 24" inside of the PEP Station enclosure. If Internet for two PEP stations is required, run a second Ethernet wire through the wye in the PVC conduit and over to the second station as shown in *Figure 3*.
10. Plug the router power connector in on the underside of the cellular router
11. Using (2) 18 gauge wire nuts, connect the red 18 gauge wire to the red wire on the router power connector and do the same for the black wires as shown in *Figure 6*.
12. Install an RJ45 connector on the end of the CAT5 Ethernet wire(s).
13. Re-install the router to the back wall of the enclosure using the Velcro backing. When using Wi-Fi, the router must be mounted at the top of the enclosure with the antennas facing down.
14. Plug the power connector and RJ45 connector(s) into their respective plugs on the underside of the router. The RJ45 connector can plug into either the left or right jack.
15. Remove the rear cover of the PEP Station by unscrewing the (4) T-25 Torx tamperproof screws on the back side of the station and disconnecting the rear cover ground wire on the inside.
16. Install an RJ45 connector on the end of the CAT5 Ethernet wire(s) at the PEP Station(s) and plug into the data port on the single board computer(s) as shown in *Figure 7*.

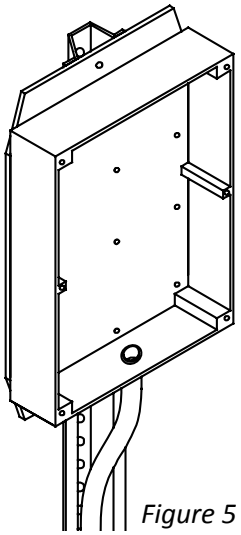

Figure 5

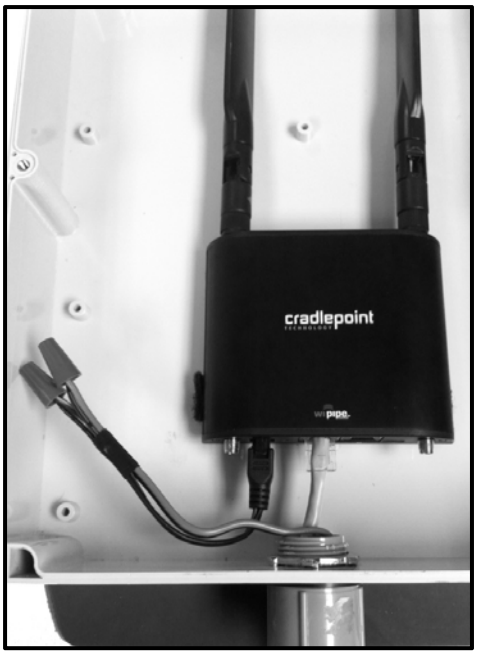

Figure 6

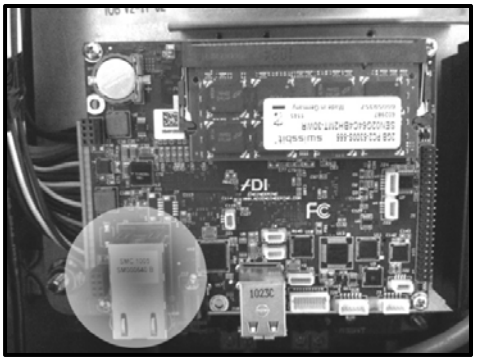

Figure 7

17. Using the (2) 3M #558 wire connectors provided, clamp the red and black 18 gauge wires running from the router to their respective colored wires running from the 12V power supply as shown in *Figures 8 and 9*.

Figure 8

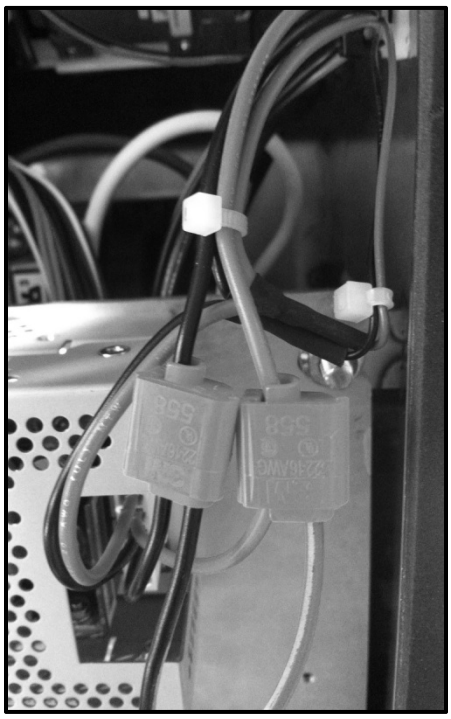

Figure 9

18. Once all of the connections are secure, replace the cover on the PEP Station and screw the (4) T-25 Torx tamperproof screws back in place.
19. Turn on the power to the PEP Station at the breaker. Power on the router by flipping the switch on the top of the router between the two antennas.
20. Verify that the PEP Station has a stable Internet connection by calling PEP Technical Support at (888) 760-0140 x114.
21. Place the gray cover on the enclosure and secure by tightly screwing the two T-20 Torx tamperproof screws to the enclosure as shown in *Figure 10.* (1) screw should go in the middle holes on both the left and right sides.
22. Place the electric vehicle sign over the gray enclosure cover and secure by tightly screwing the (4) ¾" hex screws in each corner as shown in *Figure 11*.

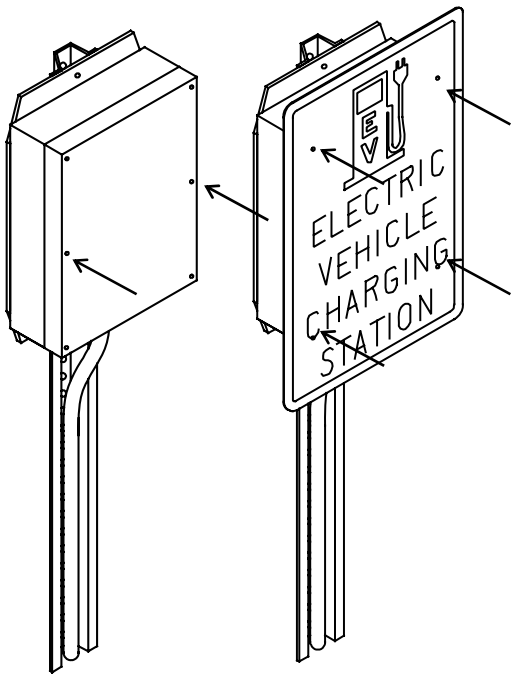

Figure 10

Figure 11